

CLAIMS

4. (Twice Amended) A piezoelectric transformer comprising a piezoelectric transformer body including a piezoelectric ceramic rectangular plate, a pair of first electrodes formed on both side surfaces of an approximate half of the transformer body in its longitudinal direction, and at least ~~one pair~~ two pairs of second electrodes formed on both side surfaces of the other approximate half of the transformer body in its longitudinal direction,

the piezoelectric transformer being mounted on a circuit board with a power supply circuit component mounted thereon to drive the piezoelectric transformer,

the second electrodes being provided with terminals connection elements, respectively, each of the terminals connection elements being connected to said piezoelectric transformer body comprising a layered structure formed by alternately stacking a plurality of inner electrodes and a plurality of piezoelectric ceramic layers in a thickness direction,

said piezoelectric transformer and said circuit board being electrically connected by the connection elements comprising at least one of a lead wire and a FPC, wherein

said piezoelectric transformer body comprises said layered structure,

said first electrodes being formed on the opposite side surfaces of said layered structure and being connected to said internal electrodes, said second electrodes being formed on the side surfaces in areas different from those of said first electrodes of said layered structure and which are kept at a same potential and connected to said circuit board.

5. (Amended) A piezoelectric transformer as claimed in claim 4, wherein a plurality of pairs of said second electrode are arranged in parallel to one another in the longitudinal direction, ~~those electrodes in~~ each pair of said second electrode having a pair of the connection elements being connected to each other ~~output terminals having so as to have~~ a same potential, and adjacent pairs of said second electrode being connected to said circuit board by the pair of connection elements as output terminals different from each other.

6. A piezoelectric transformer as claimed in claim 5, wherein said piezoelectric transformer forms an inverter power supply.
7. A piezoelectric transformed as claimed in claim 14, wherein said second electrode comprises a single output electrode formed at one end of said piezoelectric transformer body, said output electrode being provided with two terminals, said two terminals being electrically connected to said circuit board.
8. A peizoelectric transformer as claimed in claim 7, wherein said first electrode comprises a pair of input electrodes formed on a part of top and bottom opposite surfaces of said piezoelectric transformer body to be opposite to each other.
9. A piezoelectric transformer as climed in claim 8, wherein said piezoelectric transformer is used in an inverter power supply.
10. A piezoelectric transformer driven in a half-wavelength or a one-wavelength vibration mode, said transformer comprising a fixing member made of an elastic material having flexibility and being interposed between the piezoelectric transformer and said circuit board in order to mount said piezoelectric transformer on said circuit board, said piezoelectric transformer being fixed by said fixing member onto said circuit board, the fixing member being located within each of areas occupying 1/5 of the full length of said transformer from both ends thereof and formed in a spot-like or a linear fashion.
11. A piezoelectric transformer mounting structure in which a piezoelectric transformer driven in a half-wavelength or a one-wavelngth mode is mounted on a circuit board with a power suply circuit component mounted thereon to drive said piezoelectric transformer, said piezoelectric trnsformer being fixed to said circuit board through a fixing member made of an elastic material having flexibility and interposed between said piezoelectric transformer and said circuit board in order to mount said piezoelectric transformer, wherein said fixingmember is

located within each of areas occupying 1/5 of the full length of said piezoelectric transformer from both ends thereof and formed in a spot-like or linear fashion.

12. (Amended) A piezoelectric transformer as claimed in claim 10, said piezoelectric transformer comprising a piezoelectric transformer body including a piezoelectric ceramic rectangular plate, a pair of first electrodes formed on at least one of top and bottom surfaces and both side surfaces of a first approximate half of the transformer body in its longitudinal direction, and at least one second electrode formed on at least one of said side surfaces and an end surface of a second approximate half of the transformer body in its longitudinal direction, wherein the piezoelectric transformer is mounted on a circuit board with a power supply circuit component mounted thereon to drive the piezoelectric transformer, the second electrode being provided with a plurality of terminals connection elements, each of which is connected to said circuit board.

13. A piezoelectric transformer as claimed in claim 12, wherein said piezoelectric transformer body comprises one of a layered structure formed by alternatively stacking a plurality of inner electrodes and a plurality of piezoelectric ceramic layers in a thickness direction, or a single piezoelectric ceramics layer.

14. A piezoelectric transformer as claimed in claim 13, wherein said piezoelectric transformer and said circuit board are electrically connected by at least one of a lead wire and a FPC.

15. A piezoelectric transformer as claimed in claim 14, wherein said piezoelectric transformer body comprises said layered structure, said first electrodes being formed on opposite side surfaces of said layered structure and being connected to said inner electrodes, said second electrode comprising at least one pair of electrodes which are formed on the side surfaces in areas different from those of said first electrodes of said layered structure and which are kept at a same potential and connected to said circuit board.

16. A piezoelectric transformer as claimed in claim 15, wherein a plurality of pairs of said second electrode are arranged in parallel to one another in the longitudinal direction, each pair of said second electrode being connected to output terminals, and adjacent pairs of said second electrode being connected to said circuit board.

17. A piezoelectric transformer as claimed in claim 16, wherein said piezoelectric transformer forms an inverter power supply.